by these scientists. According to them the implemented software will allow to reduce a number of shifts, less working hours, a reduction of distance driven and total transportation costs minimization [3].

Professor Goos Kant concluded that the optimization technology helped centralize the planning processes. Software helps define a clear planning process, to organize efficiently the necessary data and manage the quality of data, as well as define key performance indicators to inform decision - making on quality [4].

Having analyzed the current stage of the operational planning tasks of freight automobile transportation the conclusion was made.

The decisions of vehicle rational choice for cargo transportation, routing, development schedules, vehicles loading tasks are usually resolved at the local level using criteria for solving the problem without incorporating other operational planning solutions. This approach gives that the optimal local level solution making impossible the obtaining of the next local optimal levels solution.

The consideration of the mutual influence decisions made on the local level is one of the perspective quality improvement tasks of operational planning process. The method of parallel operational planning tasks solution is considered to be used at freight motor transport enterprises. The proposed method of parallel tasks solution allows to consider the mutual influence of the operational planning problems solution results and to reduce eventually transportation costs.

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CHEMICAL GROUTING OF SOILS

MARIA MISHUROVA, post-graduate student
MICHAIL BRONZHAEV, Associate Professor, PhD
O.M. Beketov National University of Urban Economy in Kharkiv

In the light of evolving trends for improving capital construction and reconstruction of existing enterprises as well as developing underground space in modern urban planning chemical grouting assumes a particular relevance.

The essence of chemical grouting of weak soils consists in inserting into the soil low-viscosity chemical solutions pumped under pressure through previously drilled or clogged injectors or through specially equipped wells. The latter are to harden in a strictly fixed period the pore space of soil, which becomes consolidated and waterproof.

The soils under grouting should have sufficient permeability. Clay and loam soils due to the low permeability cannot be subject of chemical consolidation.

Currently, the chemical grouting methods are developed in two main directions. The first approach is based on consolidation of soils using silicate solutions and their derivatives. The second, a relatively new direction, is based on using of organic polymers such as acrylic resins and many others.

Both inorganic and organic polymers form a grouting agent represented by a gel. Chemical grouting of soils happens almost immediately.

Some forms of grouting bring new characteristics to the soil. Based on these characteristics grouting can be subdivided into the following groups:

1. the process that decisively changes construction characteristics of the soil and greatly increases the mechanical strength and impermeability;
2. the process that brings impermeability to the soil;
3. the process that increases impermeability and improves the soil specific gravity.

To develop impermeability to sandy grounds silicate and clay-silicate solutions are used. A strong grouting of sandy soils is achieved by using a two-stage process of silication. A number of one-stage processes of silication can be used in sandy grounds mainly for providing these soils with impermeability.

A one-stage method of silication using chemically active substances of the soil is developed for grouting collapsing loess soils. The method is used in collapsing soils with moisture of not more than 17%, i.e. the depth of loess should be higher than the water level. With the moisture of 20-22% gas silication is used which includes pumping carbon dioxide into the soil, then silicate and later again carbon dioxide. As the result of this method, the soil gets strength and impermeability.

A rational use of modern chemistry developments has helped to solve a number of important problems in construction.

The main of them are:

- constructing civil and industrial buildings and on collapsing and dilative soils which are extremely widespread on the territory of CIS;
- strengthening of foundations under existing constructions;
- excavating terrain under difficult conditions without expensive equipment;
- increasing the bearing capacity of piles and large diameter bearings;
- protecting concrete foundations from harmful exposure of aggressive ground waters and industrial waters;
- grouting soils for mounting of anchors.

When choosing a method of chemical grouting is necessary to consider the chemical, mineralogical composition and geoengineering properties of soils under groutin